

WHAT IS CLAIMED IS:

1. A process for stripping hydrocarbons from particulate material, said process comprising:

contacting particles with a hydrocarbon stream;

5 disengaging hydrocarbon product vapors from the particles after contact with said hydrocarbon stream to produce a stream of contacted particles containing hydrocarbons;

passing the contacted particles through a stripping vessel containing a structured

packing comprising a plurality of corrugated ribbons, each corrugated ribbon

10 having at least two bands angular to each other and at least partially

obstructing passage of the contacted particles, adjacent ones of said ribbons

defining openings for the passage of contacted particles;

discharging a stripping fluid through said stripping vessel;

recovering stripping fluid and stripped hydrocarbons from the stripping vessel;

15 and

recovering stripped particles from the stripping vessel.

2. The process of claim 1 wherein said plurality of ribbons are arranged in arrays and each array is arranged in layers.

3. The process of claim 2 wherein at least two of the layers have arrays in
20 different orientations.

4. The process of claim 1 wherein edges of adjacent ones of said ribbons define openings for horizontal passage of particles.

5. The process of claim 1 wherein edges of portions of the same ribbon define openings for the vertical passage of particles.

5 6. The process of claim 1 wherein faces of adjacent ones of said ribbons define openings.

7. An FCC stripping apparatus for stripping gaseous hydrocarbons from particulate material, said apparatus comprising:

a vessel containing a stripping section;

10 an entrance into the vessel for passing particles that contain hydrocarbons;

a structured packing in said vessel, said structured packing comprising a plurality of corrugated ribbons, each corrugated ribbon at least partially obstructing passage of the particles and having at least two faces angular to each other, and edges of adjacent ones said ribbons defining openings for the passage of particles;

15 a distributor for discharging a stripping fluid through said vessel; and

a port in the vessel for receiving the stripped particles.

8. The apparatus of claim 7 wherein said plurality of ribbons are arranged in arrays comprising layers.

20 9. The apparatus of claim 7 wherein at least two of the layers have arrays in different orientations.

10. The apparatus of claim 9 wherein a first layer is stacked upon a second layer.

11. The apparatus of claim 7 wherein said two faces of said ribbon which are angular to each other both at least partially obstruct passage of the particles.

12. The apparatus of claim 7 wherein said ribbons comprise undulating peaks and valleys.

5 13. The apparatus of claim 12 wherein said valleys in an upper ribbon and peaks in a lower ribbon are secured proximate each other.

14. The apparatus of claim 7 wherein said ribbons comprise tabs secured to a standard section.

10 15. The apparatus of claim 14 wherein said ribbons comprise two tabs that are angular with each other and are both secured to said standard section.

16. The apparatus of claim 14 wherein said ribbons in a layer are secured in an array by a tie rod at said standard section.

17. The apparatus of claim 14 wherein said ribbons each include alternating segments with tabs in adjacent segments being angular to each other.

15 18. The apparatus of claim 7 wherein said ribbons include an obstructive strip the dimension of which can be varied to adjust the degree of obstruction to fluid flow.

19. A process for stripping hydrocarbons from solid particulate material, said process comprising:

contacting particles with a hydrocarbon stream;

20 disengaging hydrocarbon product vapors from the particles after contact with said hydrocarbon stream to produce a stream of contacted particles containing hydrocarbons;

passing the contacted particles through a stripping vessel containing a structured
packing comprising a plurality of corrugated ribbons, each corrugated ribbon
having at least two bands angular to each other and said bands at least partially
obstructing passage of the contacted particles, adjacent ones of said ribbons
5 defining openings for the vertical passage of contacted particles and adjacent
bands in the same ribbon defining openings for the horizontal passage of
contacted particles;
discharging a stripping fluid through said stripping vessel;
recovering stripping fluid and stripped hydrocarbons from the stripping vessel;
10 and
recovering stripped particles from the stripping vessel.

20. The process of claim 19 wherein said ribbons include an obstructive strip the
dimension of which can be varied to adjust the degree of obstruction to fluid flow.